

Chapter 3

County Road Networks

Roads have historically been the primary element in Loudoun County's transportation network. They serve auto and truck trips connecting the County with its neighbors. The road network has been the dominant mode during the period of the County's rapid suburbanization and a stimulus for substantial economic development. However, the processes through which roads have been planned and constructed have contributed to serious road congestion on key roads in Loudoun County.

The *Revised Countywide Transportation Plan* (Revised CTP) represents a commitment by the County to "balance" the development and maintenance of the road network. The County will achieve the appropriate balance between land use planning and road planning by ensuring that the County's road policies relate to land use and environmental policies of the *Revised General Plan*. A better balance should be achieved between the road network and other modes such as transit, pedestrian and bicycle.

An increasing balance of the roles of the County, citizen groups and VDOT in providing for appropriate road sections are supported by the policies in this chapter. Protection of rural areas and local communities from large road projects that are "out-of-scale" with local needs is also addressed by the road policies.

The overall structure of the road system from the largest roads (arterials) to the small local roads is addressed first under functional classification. This is followed by policies specific to each of the geographic policy area's roads. Design and Construction Standards policies are then included, followed by policies for pave-in-place improvement and private streets. Unpaved road preservation policies are a very important part of this Chapter and Loudoun County's Road Network.

Major Road Networks and Alignments

(Refer to Revised Countywide Transportation Map, pg. 3-3)

A. Functional Classification of the Road Network

The *Revised Countywide Transportation Plan* employs the highway functional classification system developed by the Federal Highway Administration (FHWA) and used by the Virginia Department of Transportation (VDOT) to classify public roads. In conjunction with the adoption of the *Revised Countywide Transportation Plan* the references to classifications of roads in all Loudoun County ordinances and area plans will be made consistent with the definitions in Appendix One, Design Guidelines for Major Roadways Countywide. It is the County's intent that its transportation plans be fully consistent with the FHWA/VDOT functional classification system.

This system also is used by the Transportation Planning Board (TPB) for the purpose of coordinated regional planning. County and VDOT staff use this classification system in their review of land-development applications and transportation improvements associated with the applications.

The functional classification for each planned road improvement in this plan is provided in Appendix One, Design Guidelines for Major Roadways Countywide. This includes the current classification, any interim classification, and its ultimate improvement stage classification. Appendix One is updated when necessary and in cases not requiring a formal plan amendment through the Board of Supervisors' review of the Six-Year Primary Road and Secondary Road Improvement Programs, through appropriate changes arising from the land development process, and through more detailed analyses in corridor studies and other efforts.

VDOT's *Road Design Manual* and *Road and Bridge Standards* specify geometric sections and standards for the various types of roads in the functional classification system. These standards include the number of lanes in each direction; whether the road has a median or is undivided; design speed; grade; right-of-way, and other parameters. The standards specify that major roads in urbanized areas should be constructed with curb and gutters, while major roads in rural areas should have shoulders and drainage ditches. The *Revised Countywide Transportation Plan* defines roads in areas that are anticipated to become urban by the year 2010 as urban sections, even though they may currently serve undeveloped portions of the Suburban Policy Area. Sections of some roads in urban areas, such as Route 28, have been currently constructed to rural standards. The County calls for such roads to become consistent with urban standards as they are improved over time. VDOT standards provide flexibility for right-of-way widths. This Plan proposes a right-of-way that can adequately accommodate the specified roadway geometry.

Functional Classification Policies

1. The County will generally use the Federal Highway Administration/Virginia Department of Transportation (FHWA/VDOT) functional classification system in the *Revised Countywide Transportation Plan* for the purpose of planning a coordinated highway network. The description of highways in all applicable County ordinances and planning documents also will be consistent with this functional classification system.
2. The County will use VDOT's Road Manual, Road and Bridge Standards and Subdivision Street Standards in the *Revised Countywide Transportation Plan* along with the newly encouraged flexibility on highway design from the Federal Highway Administration for the purpose of specifying the design factors of each road in the planned highway network. However, in special cases, such as Snickersville Turnpike, the County will coordinate with VDOT to employ standards appropriate to the project to ensure conformity with the land use, environmental and other policies of the *Revised Countywide Transportation Plan* and the *Revised General Plan*.
3. The County encourages the continued improvement of the entire County road network and transit networks and will ensure that all improvements further the land use, environmental and transportation objectives of the Comprehensive Plan as implemented by the Zoning Ordinance. The documents "Design Guidelines for Major Roadways Countywide" (Appendix One) and "Flexibility in Highway Design" will be adopted as part of the *Revised Countywide Transportation Plan* and will be used by the County to identify the recommended design features for new roads. This document will be updated regularly, at least every two years, and may be modified by resolution of the Board of Supervisors through land development applications or when otherwise deemed appropriate by the Board.
4. The road network will consist of a coordinated hierarchy of arterial, collector and local roads. Access to the arterial network will be primarily from collector roads. Local roads will access the collector system directly and not the arterial network in the Suburban Policy Area and wherever possible in the Transition and Rural Policy Areas.

5. The County will update the information in Appendix One, “Design Guidelines for Major Roadways Countywide” at least once every two years to be reviewed by the Planning Commission and Board of Supervisors.

B. Road Improvement Priorities for Individual Roads in the County’s Road Network

(Refer to Proposed Ultimate Conditions for Major Transportation Facilities in Eastern Loudoun County Map, pg. 3-5)

It is important that the County set priorities for its planned road improvements in order to be able to efficiently focus public and private resources on major projects needed in the short term. Short-term priorities are established by the Virginia Transportation Development Plan (VTDP) and Secondary Road Improvement Program (SRIP). These priority projects reflect considerable effort by the County and VDOT in programming, designing, and funding actions. In addition, these technical exercises have been combined with political judgments as to the projects’ relative importance. It is, therefore, logical for the project priorities in these Programs to be consistent with this Plan.

In 1999, the Northern Virginia jurisdictions, VDOT and Virginia Department of Rail and Public Transportation (DRPT) adopted a Northern Virginia 2020 Transportation Plan (2020 Plan). This plan sets priorities for major transportation projects and designates them according to an intermediate time frame (2010) and a long-term time frame (2020). Loudoun County projects, except those beyond the year 2020, have been placed into one of these categories. The County uses the 2020 Plan, in conjunction with an understanding of land use policies and travel demand model outputs, to set intermediate and long-term priorities. See Appendix Two for the County’s short-term, intermediate and long-term priorities for road improvement projects.

Road Improvement Priorities Policies

1. The Virginia Department of Transportation Secondary Road Improvement Program (SRIP) and Virginia Transportation Development Plan (VTDP) will be the process for updating short-term road and transit improvement priorities on a regular basis. For the intermediate (2010) and long-term time frame (2020), the County will base transportation decisions on its land use policies and its transportation model outputs. The Northern Virginia 2020 Transportation Plan (2020 Plan) will also be considered.
2. New road construction and road improvements will promote traffic, pedestrian, and bicycle safety including appropriate locations for transit stops and provide for improved vehicular and transit operations consistent with area land uses and regional demands while adhering to community design and resource protection policies and ordinances.

Geographic Policy Area Roads

This section covers the road policies for the Rural, Suburban, and Transition Policy areas as defined geographically in the *Revised General Plan*. (Also refer to Chapter Six, Implementation). For the Joint Land Management Area (JLMA) policies and a description of the road improvements favored by the towns, refer to Chapter Nine of the *Revised General Plan*. For each of the Policy Areas a description of the major roads and significant issues is provided below followed by the policies for each area.

A. Suburban Policy Area Roads

It is expected that the Community Plans for the Suburban Policy Area will provide an opportunity to reconsider the roles of residential roads and introduce traffic calming elements supportive of enhancing the quality of life in local neighborhoods. The ultimate highway network essential to support the County's economic development within the Suburban Policy Area is specified in the *Revised Countywide Transportation Plan*. There are major road construction projects needed to implement the planned network (see Proposed Ultimate Conditions for Major Transportation Facilities in Eastern Loudoun County map, pg. 3-5). Among the most important and expensive of these projects are the following:

- **VA Route 28:** The Board of Supervisors endorsed the preferred design concept for the programmed Route 28/Route 625 interchange in March 2000. VDOT is now proceeding with the final engineering for this interchange. The Commonwealth of Virginia has provided \$52 million in funding for this project. Construction was anticipated to be completed by 2005. A short-term project to provide dual left turn lanes on Route 28 and Route 606 was completed by December 2000. In addition, \$15 million in public sector funding had been secured to begin design and right-of-way acquisition for a Route 625/Route 606 interchange. However, in May 2001, the Commonwealth Transportation Board (CTB) selected a private team of transportation firms to construct Route 28 improvements in Loudoun and Fairfax Counties under the provisions of the Public-Private Transportation Act of 1995 (PPTA). In September 2001, following contract negotiations, the PPTA Route 28 project team will assume responsibility for the completion of the Route 625 and Route 606 interchanges. The PPTA time schedule moves the completion of these two interchanges up to 2003 from their previous VDOT construction dates of 2005 and 2008. In addition, the PPTA project will construct interchanges at Route 28 and Nokes Boulevard, Sterling Boulevard and Innovation Avenue. The PPTA project will also widen Route 28 to eight lanes from the County line to Sterling Boulevard. Currently, completion of all components of the Route 28 PPTA project in the County is scheduled for 2005. This construction schedule may be impacted depending on the results of regional air quality conformity testing now being conducted by Metropolitan Washington Council of Governments (COG).
- **VA Route 28 Parallel Roads – Atlantic Boulevard, Pacific Boulevard and Davis Drive:** Completion of the remaining gaps in these parallel roads to Route 28 will take pressure off of the main road as interchanges are being constructed. The pace and locations of building these fill-in segments will depend on development. The next segment to be completed will be Atlantic Boulevard between Route 7 and Severn Way where an existing segment continues south to Orbital Corporation and Magnolia Drive. This four-lane median divided section is being constructed by the private sector and will be completed in 2001. Completion of Pacific Boulevard between Route 625 and Route 606 by 2007 is a County priority and part of this improvement will be constructed by private sector proffers. Extension of Pacific Boulevard across the W&OD and to the north as well as Atlantic Boulevard across the W&OD appear to be longer-term projects.
- **VA Route 7:** The next interchange to be completed by 2002 will be at Algonkian Parkway/Route 7 through a public/private joint venture at an approximate cost of \$17 million using the Dulles Town Center Community Development Authority. This will be followed by the Route 7/Claiborne Parkway (near Route 641) interchange proffered in two phases by the private sector between 2003 and 2007. Remaining Route 7 interchanges in the Suburban Policy Area are at Loudoun County Parkway, Ashburn Village Boulevard and Route 659. It is expected these facilities will be constructed between 2008 and 2013.

The completion of the last widening of Route 7 to a six-lane road in eastern Loudoun County was completed in 2001 as a public sector project. To the east of Loudoun County, Route 7 is programmed to be a six-lane median divided road through Fairfax County to Tysons Corner. This project will be completed in phases prior to 2010.

- **VA Route 7 Parallel Roads – Russell Branch Parkway, Gloucester Parkway and Riverside Boulevard:** These roads will be completed between Route 28 and Leesburg as development occurs in the county. Russell Branch Parkway and Gloucester Parkway between Route 659 and Route 641 are expected to be completed in phases by private sector proffer by 2010 as are some sections to the east of Route 641. It is anticipated that a full parallel road system will be completed by 2020.
- **Route 659/Route 659 Relocated:** Beginning at Route 7, Route 659 is planned to be a six-lane median divided road to a point approximately a half-mile north of Route 772 at the northern portion of the Brambleton property. This northern section of Route 659 is at or near the boundary between the Suburban Policy Area and the Transition Policy Area. The County and VDOT have worked together to develop a project program to widen Route 659 to a four-lane, median-divided road between Route 7 and Route 625 N by 2007. Part of the funding for this improvement will come from existing private-sector proffers. At the North Brambleton split point, the existing Route 659 becomes a less important road in the long term, as compared to Route 659 Relocated, which will connect with the Route 234 Bypass in Prince William County. A portion of existing Route 659 will transition down to a two-lane road in the Arcola area and be terminated north of Route 50. The regional role of existing Route 659 south of Route 50 also will be constrained, because it connects with existing two-lane Route 234 in Prince William County. It is unlikely Route 234 can be widened, since it runs through the Manassas National Battlefield Park.
- **Loudoun County Parkway (Route 607)/Tri-County Parkway:** This is Loudoun County's second most important north-south road after Route 28. It is called Loudoun County Parkway north of Route 620 (Braddock Road) and the Tri-County Parkway south of Route 620. The next section to be completed will be a four-lane, median-divided road between Route 50 and Edgewater Street (just north of Braddock Road). This will be completed by 2002. In addition, a small section of Route 606 between Routes 50 and 621 is the alignment for the Loudoun County Parkway. VDOT has committed to an Environmental Impact Statement/Alternate Alignment Study for the Tri-County Parkway south of Braddock Road to I-66. A Request for Proposals for consultant services has been issued.

Loudoun County needs to continue to work for the construction of the Loudoun County Parkway (Tri-County Parkway) as a controlled access four- to six-lane divided arterial that will serve a number of functions for the County:

- a. Provide a link between the Tri-County Parkway in Fairfax and Prince William Counties;
 - b. Provide a second north/south connection between Route 7 to Interstate 66 in Fairfax County to help relieve traffic pressures on the Route 28 connection to I-66 with Route 28 being the first connection.
 - c. Improve access to Dulles Airport from the south via an existing interchange on the Dulles Greenway.
- **Route 50 East of Route 659:** The results of the Route 50 Corridor Study are considered to be part of the *Revised Countywide Transportation Plan*.

Suburban Area Road Policies

1. To the extent allowed under current funding source requirements, the County will direct transportation funding to the Suburban Policy Area where planned land uses and population densities warrant the expansion of roadway capacity and the installation of alternative transit systems such as rail.
2. The County will support the establishment of a funding program for Route 28, including participation of the private sector under the provisions of the Public Private Participation Act of 1995 to implement a program of short-term strategies to accelerate the construction of Route 28 interchanges and its parallel roads to complete Route 28's transition to a freeway. The County will support a funding program of short-term and long-term strategies to accelerate the construction of Route 7 interchanges and its parallel roads west of Route 28 to complete Route 7's transition to a limited access freeway.
3. The County will support a funding program for short-term and long-term projects to accelerate the improvements and widening of Route 659 Relocated as an important north-south corridor between Loudoun and Prince William Counties.
4. The County will support short-term and long-term strategies for the design and construction of Loudoun County Parkway/Tri-County Parkway as a north-south connector road between Loudoun, Fairfax and Prince William Counties.
5. Route 7 East of Route 28 is envisioned as a gateway to Loudoun County. Future improvements to this segment of the roadway will be designed during the Community Plan process and will support the revitalization land use strategies envisioned for this area.
6. The County will work with VDOT to promote and enable increased flexibility of road design standards to allow for narrower streets and greater pedestrian and bicycle friendliness.
7. Traffic calming measures such as brick crosswalks and traffic circles will be explored for Algonkian Parkway and other community roadways in the Suburban Policy Area.
8. The County supports and has incorporated in the *Revised Countywide Transportation Plan* the development of the Loudoun County Parkway. The County will support the planning and development of public transportation services for the Loudoun County Parkway Corridor, including connections to the Dulles Corridor Rapid Transit Project.
9. The County will consider reduced design speeds and other flexible design standards on road segments within Transit Nodes to ensure pedestrian and bicycle mobility. Roadway design characteristics within Transit Nodes will complement the streetscape design goals outlined in the *Revised General Plan*.

B. Rural Policy Area Roads

The *Revised General Plan* envisions reduced residential densities in the Rural Policy Area. The rural road network, which includes many of the scenic roadways, is essential for preserving rural character, is supportive of tourism and the rural economy, and should be maintained as either two lane paved roads or as unpaved gravel roads with VA Route 7 the only exception.

- **US Route 15**, running north-south, is a state-designated Virginia Byway with historic landmarks located along it.¹ US Route 15 will remain a two-lane rural highway in Loudoun County with safety improvements to be built as needed and funded.
- **US Route 50** runs east-west between Fairfax and Fauquier Counties. In the Rural Policy Area there is a Traffic Calming Demonstration Project funded by the US Department of Transportation (USDOT) from Lenah (in Loudoun County) to Paris (in Fauquier County). This traffic calming project will maintain US Route 50 as a two-lane highway. State Virginia Byway designation and Loudoun County Historic Roadway District designation will be sought for the portion of Route 50 running through the Mosby Heritage Area in recognition of the road's scenic and historic character.
- **VA Route 7** is a primary arterial highway running east-west through Loudoun County. In the Rural Policy Area, it connects from the western boundary of the County with Clarke County to the western boundary of the Town of Leesburg. VA Route 7 is currently planned to be a six-lane primary arterial highway between West Market Street (in Leesburg) and Round Hill, and a four-lane primary arterial highway from Round Hill to the Clarke County line. This limited access highway upgrade was approved by the Board of Supervisors as a high priority implementation project in the fall of 1999.
- **VA Route 9** will be maintained as a two-lane minor arterial highway in the Rural Policy Area. VA Route 9 runs from the northwest boundary with West Virginia to VA Route 7 near Paeonian Springs. The Loudoun Board of Supervisors has requested funds from the Commonwealth Transportation Board for a VA Route 9 Corridor Study for safety improvements with community input.
- **VA Route 287**, between the Potomac River near Brunswick, Maryland and Route 7 in Purcellville, will be kept as a two-lane minor arterial highway. The Town Council of Purcellville has requested funds from the Commonwealth Transportation Board for improvements to the interchange at VA Route 7 and VA Route 287 as well as extending Route 287 on the south side of Business Route 7 to Route 690 as the South Collector Road. Safety improvements will also be implemented on Route 287.
- **All secondary roads (numbered 600 and above)** in the Rural Policy Area will be kept as two-lane paved roads or unpaved roads (approximately 331 miles unpaved in mid-year 2000) with only essential safety improvements to be undertaken where required to provide adequate levels of service and safety. Road improvements commensurate with impacts are expected to be provided by residential and non-residential developments along rural roads.

¹ A Virginia Byway is defined as a road, designated as such by the Commonwealth Transportation Board (CTB) having relatively high aesthetic or cultural value, leading to or within areas of historical, natural or recreational significance.

Unpaved Roads

Loudoun County has a 331-mile network of unpaved rural roads that reflects the County's agricultural heritage. Today, these unpaved rural roads, often tree lined with historic stone walls, are recognized by the vast majority of rural residents as a fundamental asset that should be preserved. The unpaved rural road network has a natural traffic calming effect that permits their shared use for horseback riding and hiking and contributes to the quality of life sought by rural households. They are recognized as adding to the rural character that attracts tourists. They also facilitate the safe, efficient movement of farm vehicles. The County is committed to the preservation of the unpaved rural road network in its present state where possible, provided that adequate levels of service and safety are maintained.

In any case, paving most of the unpaved roads is cost prohibitive given the level of funding devoted to the Secondary Road Improvement Program (SRIP) and the higher priority the County assigns to roads in the Suburban and Transition Policy Areas. The latest estimates for paving these roads is \$1.5 million per mile. Even if the County chose to pave every road in Loudoun it would take more than a century to do so at current funding levels.

The County recognizes that the higher the traffic volumes on unpaved roads the higher the maintenance costs incurred by VDOT; however, the cost of maintaining all of the unpaved roads in Loudoun County is less than the cost of paving one mile of unpaved road. The *Revised General Plan* envisions the reduction of permitted rural densities in part to mitigate the additional costs that higher traffic volumes incur and to maintain adequate levels of service and safety on the unpaved roads. The rural paved road network often serves the collector road function for the unpaved roads.

"Rustic Road" Program

VDOT manages a Rural Rustic Road Program for any unpaved secondary road that carries at least 50 but no more than 1,000 vehicles per day. The engineering standards in this program are designed to preserve the significant historic and environmental features of these low volume roadways, while limiting impacts to the rights-of-way of the existing roads. The following VDOT guidelines apply to the Rural Rustic Road Program:

- Roadways must be unpaved and already within the State Secondary System.
- Roadways must be a priority (line item) in an approved Secondary Six-Year Plan, even if the funding source is not from normal, secondary construction allocations.
- The Board of Supervisors, in consultation with VDOT's Resident Engineer or designee, must designate by a specific resolution a road or road segment as a Rural Rustic Road.
- Roadway or roadway section must be predominately for local traffic use.
- The local nature of the road means that most motorists using the road have traveled it before and are familiar with its features.
- The Board of Supervisors will endeavor to limit growth on roads improved under the Rural Rustic Road program and cooperate with the Department through its comprehensive planning process to develop lands consistent with rural rustic road concepts.

"Pave In Place" Program

VDOT manages a "pave in place" program for any unpaved secondary road that carries at least fifty but no more than 750 vehicles per day. These roads may be paved or improved and paved within their existing rights-of-way or within a wider right-of-way that is less than forty feet wide if the following conditions are

met:

- The governing body of the County has requested paving of such road as part of the six-year plan for the County.
- The Commonwealth Transportation Commissioner, after having considered only (i) the safety of such road in its current condition and in its paved or improved condition, including the desirability of reduced speed limits and installation of other warning signs or devices (ii) the views of the residents and owners of property adjacent to or served by such road, (iii) the views of the governing body making the request, (iv) the historical and aesthetic significance of such road and its surroundings, (v) the availability of any additional land that has been or may be acquired by gift or other means for the purpose of paving such road within its existing right-of-way or within a wider right-of-way that is less than forty feet wide, and (vi) environmental considerations, shall grant or deny the request for the paving of such roads under this subsection.

In 2001, Virginia repealed the sunset provision on the legislation enabling the Pave-In-Place Program. This program therefore could be used for appropriate safety improvements to unpaved roads in instances endorsed by the County.

Rural Roads Policies

1. Transportation road improvements in the Rural Policy Area will be focused on safety and adequate levels of service improvements which will be designed to protect the rural character of the road network.
2. All the roads in the Rural Policy Area will be kept as two-lane roads except Route 7, which ultimately will be a six-lane principal arterial.
3. Route 7 will be developed as a six-lane fully limited access highway ultimately, with the portion between its interchanges (and including the Route 7/9 inter-change) with Route 9 and West Market Street in Leesburg being a high priority project.
4. The County will support development of Route 7 as a limited access road between the Leesburg interchange and the Route 9 interchange.
5. Route 9 will be maintained as a two-lane rural arterial highway with a Corridor Study to be completed with input from the community to achieve safety, convenience and efficiency on Route 9, while at the same time preserving its scenic character and protecting the environmental quality of the areas through which it passes.
6. Route 15 will be improved as a two-lane roadway with 12-foot travel lanes, with the exception of expansion to four-lanes between Virts Corner and Woodlea Drive, to achieve safety, convenience and efficiency on Route 15, while at the same time preserving its scenic character and protecting or enhancing the environmental quality of the areas through which it passes.
7. The County fully supports the Route 50 traffic calming project that was federally funded in the 1998 TEA-21 bill as a national model in rural traffic calming. The County will work with the state appointed Task Force and the local communities on the final design and implementation of the project. A goal of the project is to produce similar projects in other areas of the County as a means of providing safer communities at cost savings. Traffic calming is in keeping with the goal of preserving the scenic and historic value of the Rural Policy Area.

8. To protect the entrance corridor to the National Register Middleburg Historic District, as well as the scenic and historic character and importance of the first paved road in the Commonwealth, the County will designate Route 50 through the Mosby Heritage Area as a Historic Roadway District as provided for in the 1993 Zoning Ordinance. To further protect the entrances to the Middleburg Historic District, the County will designate Route 626 (Foxcroft Road and The Plains Road) as a Historic Roadway District as provided for in the 1993 Zoning Ordinance.
9. Route 287 will be maintained as a two-lane rural arterial highway to be coordinated with the Town Plans.
10. Secondary Roads (numbered 600 and above) in Loudoun's Rural Policy Area will be maintained in their present condition as either paved or unpaved roads with only safety improvements to be undertaken on these roads. Any savings in state funds would be redirected to other secondary roads in the Suburban and Transition Policy Areas.
11. The County will consider improvements on unpaved rural roads based on volumes, the nature of the road users (local vs. unfamiliar drivers), and accident data.
12. The County will continue to coordinate with VDOT on procedures that enable County review of VDOT road improvement plans for rural roads so that the County can assess and prevent potential negative impacts of VDOT road projects on such rural character features as tree canopy, stone walls and fences, hedgerows, historic and agricultural structures, and viewsheds.
13. To protect and preserve the historic character of the historic roads in the southwestern part of the county, the County designated a network of 32 historic roads, which is known as the "Beaverdam Historic Roadways District", as a Historic Roadways District as provided for in the Zoning Ordinance. The Beaverdam Historic Roadways District is located south of Route 734 and north of Route 50 and is bounded to the east by Route 611 and to the west by the Blue Ridge Mountains and the Clarke and Loudoun County lines.
14. Any necessary improvements to roads in or adjacent to existing villages will incorporate site specific design solutions so as to preserve the character and fabric of the villages.
15. The County will establish performance standards for rural gravel roads that will be used to assess allowable rural residential densities and will seek VDOT endorsement of these standards.
16. The County will work with VDOT to allow the use of alternate road treatments for unpaved roads.
17. In cases where unpaved roads must be paved, pave-in-place and rustic road standards will be used to the maximum extent possible.
18. The County will work with VDOT toward extensions and refinements to pave-in-place and rural rustic road legislation including its application to improvements to hard surfaced roads.
19. The County will work with VDOT, and seek state enabling legislation if necessary, to provide rural road standards for safe travel by alternative road users such as buggies, horses, bicycles and pedestrians. The needs of rural tourism will be a major consideration.

C. Transition Policy Area Roads

The Transition Policy Area is a new planning area introduced in the *Revised General Plan* (see Chapter Eight of the *Revised General Plan*). It is envisioned as a distinct planning area to serve as a visual and spatial transition between the Suburban Policy Area to the east and the Rural Policy Area to the west. The

Transition Policy Area is divided into six sub-areas ranging in density from one dwelling unit per 10 acres to two dwelling units per acre in a village pattern. Revised land use and density policies reduced traffic volumes in the Transition Policy Area as compared to COG Round 6.2 forecasts associated with the 1995 *Countywide Transportation Plan*.

The existing road system in the Transition Policy Area is straining to handle current traffic at acceptable levels of service (LOS). Already approved developments as well as applications under review will require expansions to the road network and some of the required improvements have already been proffered. A significant portion of the *Revised Countywide Transportation Plan* planned road network does not exist yet, including the Tri-County Parkway. The planned interchange at Route 7/Route 659, which is partially proffered, should be constructed. Route 659 is a two-lane road, which needs to be widened to four lanes before planned Villages can be constructed. Existing proffers and allocated public funds will help accomplish this between Brambleton and Route 7.

Route 50 is a four-lane median divided road. Route 772 is a two-lane road that is being widened to four lanes from Brambleton to the Greenway. Route 621 is a two-lane road subject to rapidly growing commuter traffic between Leesburg and Route 50. Because of these traffic pressures, the road network in and bounding the Transition Policy Area is itself in a state of flux. For some of the arterial and collector roads in the area, the road section currently in place is planned for expansion to a larger facility in two phases, an interim section and an ultimate section.

Subject to verification by the County's travel demand forecasting model, the typical section of some of the roads in the Transition Policy Area have been adjusted to reflect lower anticipated traffic volumes. The *Revised Countywide Transportation Plan* Appendix One, entitled Design Guidelines for Major Roadways Countywide as revised, contains details on the existing, interim and ultimate conditions for Transition Policy Area roads. Appendix Two, Road Priorities, provides the timeframe priorities for these roads.

There are basically two types of regional roads in the Transition Policy Area in terms of the areas they connect. The first are roads that connect major activities centers outside of the Transition Policy Area. For example, Route 621 connects Leesburg to Route 50/Route 606 Fairfax County/the Regional Core and runs through the Transition Policy Area. Changes in Transition Policy Area policies are unlikely to change the *Revised Countywide Transportation Plan* ultimate sections of the road since most of the traffic will be through traffic. Traffic from developments in the Transition Policy Area will only amount to a small portion of the total traffic on these roads. The second are roads needed to serve development in the Transition Policy Area.

Typical section adjustments have been made to the roads in the Transition Policy Area. Details on the design and operation requirements for these roads can be found in Appendix One: Design Guidelines for Major Roadways Countywide.

There are a number of techniques that could be used to signal a traveler that a boundary into the Transition Policy Area has been crossed. A "transitional" image could be reinforced by other visual and operational clues. Perhaps the most important visual message would be wider, more naturally planted buffers than those in the Suburban Policy Area as well as character of development, which could be seen from the road. Finally, appropriate techniques that emerge from the Route 50 Traffic Calming program could be applied in the Transition Policy Area.

Transition Area Road Policies

1. The typical sections of collector and arterial roads in the Transition Policy Area will be adjusted to reflect updated land use and density policies. Changes will be made to the Design Guidelines for Major

Roadways Countywide Appendix of the *Revised Countywide Transportation Plan* to reflect these adjustments. These typical section adjustments will be verified through traffic forecasts obtained through the County's travel demand forecasting model.

2. Major collector and arterial roads that serve significant traffic outside of the Transition Policy Area will be planned for the necessary capacities and roadway sections to accommodate through trips.
3. The Lenah Connector between the Tall Cedars Parkway and the Prince William County line will be studied in cooperation with Prince William County to evaluate alternate alignments and determine whether the road section should be retained in the CTP.
4. Appropriate techniques will be used to visually signal travelers that they have left the Suburban Policy Area and entered the Transition Policy Area such as:
 - a. A reduction in the number of through travel lanes;
 - b. A change from a median-divided to an undivided section;
 - c. A change in speed limit;
 - d. Natural landscaping;
 - e. The use of shoulder and ditch sections instead of curb and gutter sections.

D. Towns Policy Area Roads

The challenge for the County and the towns is to accommodate population growth and the resulting increases in traffic yet maintain the character of the historic towns. Leesburg, Hamilton, and Round Hill are reducing the size of their JLMAs, which will have an effect on the planned road network through and around them. Many towns are also interested in introducing new traffic calming measures and pedestrian linkages. The discussion of road improvements planned for the seven incorporated towns' JLMAs can be found in Chapter Nine of the *Revised General Plan*.

Design and Construction Standards

It is important that the roads serving the Suburban, Transition, and Rural Policy Areas be designed and constructed in a manner which is consistent with the special character of adjoining communities and land uses. Roads should fit and complement the communities they serve.

VDOT has design standards for the wide variety of secondary roads that exist in Loudoun County, ranging from rural local roads to subdivision streets. However, as the County developed policies to encourage creative forms of residential development and the public demand for preservation of the character of the County's unique rural roads grew, the strict application of VDOT standards has caused problems and frustration.

VDOT design standards are closely correlated with *A Policy on Geometric Design of Highways and Streets* prepared by the American Association of State Highway and Transportation Officials (AASHTO). VDOT has been willing to consider modifications to specific standards for individual projects on a case by case basis, but the process does not result in a permanent change of VDOT standards in the County.

It is the County's view that a re-evaluation of some VDOT policies and standards would allow more efficient construction of certain types of projects with shorter time schedules and lower costs. For example, restrictions on the use of VDOT maintenance funds could be revised to allow these funds to be used for minor safety projects that need only a small amount of right-of-way. More flexibility for spot

improvements as opposed to having to improve a longer section of road via a large Secondary Road Improvement Project is also desirable. Use of alternate road treatments for unpaved roads should be sought. More expeditious procedures for installing traffic calming techniques, traffic signals, stop signs and safety signage and lower speed limits need consideration.

There is strong support in the County to modify VDOT standards for roads in the Rural Policy Area in a manner which is sensitive to the rural character. The first successful use of modified standards for improvement of an existing paved rural road were on two projects on Snickersville Turnpike, Route 734. The design of these projects used the prototype of what would become “pave-in-place” standards later authorized by the state legislature. There was also extensive public participation in the design process coordinated through the Snickersville Turnpike Association.

Design and Construction Standards Policies

1. New road construction will be designed to achieve a pedestrian-friendly community character and environmental protection.
2. Coordinated trail and/or sidewalk facilities will be incorporated in all road improvement projects in which provision for pedestrian movement is consistent with the function and character of the road and/or where there is an opportunity to establish a connection with the County’s existing or proposed trail system.
3. All new roads should be planned and constructed as appropriate to the standards of the Virginia Department of Transportation for acceptance into the State Highway System.
4. Provision for interparcel connections may be considered in development proposals in the Rural Policy Area, as provided in the *Facilities Standards Manual (FSM)*, and required in all development proposals in the Suburban Policy Area and encouraged in all development proposals in the Transition Policy Area to achieve a local road network, and to help keep local traffic off regional roads. In the Rural Policy Area, interparcel connections may detract from the rural setting and may not be required in all instances.
5. Direct vehicular access is discouraged between individual residential and commercial lots. Direct access from individual lots to arterial and major collector roads is discouraged.
6. Local roads that provide individual lot access will be designed to be consistent with the character of the communities they serve. They must be pedestrian-friendly and provide for safe bicycling. This is best achieved by designs that encourage slower, safe speeds and invite pedestrian and bicycle activity, using landscaped/treelined medians, sidewalks, etc.
7. The County will continue to work with appropriate business and community groups to refine and improve Virginia Department of Transportation road design standards. This process will include development of justifications for the proposed changes and strategies for approaching the state to implement the changes.
8. The County will require developers and request Virginia Department of Transportation to use Scenic Design Guidelines in planning road improvements on all designated Virginia Byways in Loudoun County. Such optional design guidelines may include the following:
 - a. Lower design speed and narrower rights-of-way to minimize land acquisition and disturbance, and to reduce the need for removal of stone walls, treelines, fences and other such features, that often parallel roads. Lower design speeds also allow road alignments that follow the existing terrain and

- minimize road cut and fill areas. Allowing the road to follow the topography of the area reduces the amount of land disturbance and the profile of the road.
- b. Variable shoulder and ditch widths that are determined by the existing topography. In areas where natural water flow is away from the road, ditches could be eliminated. Variable shoulder widths could provide the flexibility to avoid removal of trees, stone walls or other such features.
 - c. Landscaping on all cleared areas that includes indigenous plants, trees, wild flowers and other groundcover found in natural areas. Landscaping should be allowed as close to the road as possible while maintaining a safe and reasonable sight distance and clear zone.
 - d. Rest areas, “pullover” areas and other features that provide the opportunity for vehicles to pull off of the main travelway.
 - e. Construction material, such as light-colored pavement, guardrails and fences that reflect the historic and rural nature of the area (i.e., painted or rustic guardrails rather than steel). In the case of new bridges, abutments and other structures, exteriors and facades should be of materials, such as the stone used in some of the historic bridges in the County.
 - f. In the case of arterial roads where a four-lane, divided section is proposed:
 - i. A variable median width should be used to allow the travel lanes to maneuver around features that are to be protected.
 - ii. Utilizing native species within the median should be used to reduce the visual impact of the road, yet allow appropriate and safe sight distance at crossovers and intersections.
 - iii. Each travel surface should individually follow the existing topography to minimize cut and fill areas and lower the road profile.
9. The Scenic Design Guidelines and other Policies supporting the preservation of the character of rural roads will be applied in ways which will not impede the construction of needed safety improvements on rural roads.
 10. The County will request VDOT to re-evaluate its policies that restrict the use of maintenance funds to allow these funds to be used to construct minor safety improvements.
 11. The County will work with VDOT to allow the placement of spot-improvement projects on the Secondary Road Improvement Program.
 12. The County will incorporate landscaped medians using native species where possible.
 13. The County will retain native vegetation and woodlands along roadways where possible.
 14. The County will develop a standardized sign to be erected by developers in locations where future street extensions are anticipated.

A. Traffic Calming

The County places a high priority on traffic calming and seeks to implement a countywide approach. The Institute of Transportation Engineers (ITE) has defined traffic calming as “the combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized street users”. Traffic calming must be community-based and supported. It is intended to modify driver’s behavior, reduce vehicle speed to legal limits, increase safety for drivers and pedestrians, and improve the quality of life through minimizing the negative effects of motor vehicles on the environment, streetscape and neighborhoods. It also should encourage the use of alter-native modes of

transportation such as pedestrian trails, bike paths and bus transit.

The techniques for implementing traffic calming include such traffic engineering components as:

- Vertical Changes in the Street (speed bumps, speed tables, raised intersections)
- Lateral Changes in the Street (chicanes², offset intersections, lateral shifts)
- Constrictions in the Street (narrowed pavement widths, pinch points, islands, traffic circles or roundabouts, entrance features, small corner radii)
- Related Streetscaping (surface textures, edge treatments, colors, landscaping, street trees and street furniture)

Traffic calming was introduced to Loudoun County through the efforts of a citizens group (The Route 50 Coalition). The group carefully built widespread citizen and business support for a traffic calming concept that included Route 50 from Lenah to Paris. The group was instrumental in obtaining federal financing as a demonstration project and is now working with a joint committee drawn from VDOT and the citizens to plan and implement the program.

Traffic Calming Policies

1. The County will promote and implement traffic calming measures in all policy areas.
2. The County will seek to expand traffic calming through community based programs in the Suburban, Transition, Rural Policy Areas and Towns through the proposed Community Plan process, new development applications, and through collaboration with VDOT on rural collector and arterial roads. The County's commitment to maintain its unpaved rural roads is a de facto recognition of the traffic calming effect of these roads on local traffic.
3. The County will work with VDOT on developing residential traffic-calming plans as part of the Community Plan process.
4. The County will work collaboratively with VDOT and the community in identifying needed traffic calming measures in residential communities and Towns. Traffic calming includes both physical measures (traffic circles or roundabouts, raised cross-walks, chokers, chicanes, and speed bumps) and non-physical measures (community education and enforcement).
5. The County will work with VDOT to identify appropriate measures to curb cut-through traffic and through-truck traffic problems in residential communities.
6. The County will explore and implement safe, convenient, and visually attractive crossing alternatives to enable pedestrians and bicyclists to cross major thoroughfares. Alternatives may include new intersection design, pedestrian and bicycle bridges and underpasses, and urban decks.³

² Chicanes are a form of curb extension that alternate from one side of the street to the other.

³ Urban decks are platforms of landscaped greens that span over major roadways. Examples include the park in Rosslyn, VA that spans over I-66 and other proposed urban decks in the region; one that would reconnect the Kennedy Center to nearby Washington, D.C. neighborhoods and another proposed for the Woodrow Wilson Bridge Project.

B. Private Streets

The use of private streets by new development in Loudoun County is limited. The County requires frontage on a public road maintained by VDOT for nearly all types of development. Exceptions to this policy include A-10 (one dwelling unit/10 acre) subdivisions, structures in historic districts, family subdivisions and low density 25- and 50-acre residential subdivisions. During the rezoning process, the Board of Supervisors may grant modifications to permit the use of private streets for single-family detached housing. Private streets serving townhouse and multi-family uses in PD-H districts may be permitted by-right, because such lots are most often accessed by a travelway, which also serves as a parking area. Contemporary townhouse developments use perpendicular or angle parking along the travelways. This feature is not permitted by VDOT design standards. All private streets must meet the design and construction standards of the County's *Facilities Standards Manual* (FSM). Maintenance of these private streets is the sole responsibility of the identified private sector entity. Such streets are not eligible for acceptance into the public street system.

Proponents of private streets argue that VDOT design standards are excessive with respect to street widths, design speed, landscaping restrictions, and other requirements and do not allow creative community designs. VDOT continues to advise against the use of private streets for new development because of concerns related to continued maintenance, road network development, and other issues. The County has taken steps with the *Land Subdivision and Development Ordinance* (LSDO) to prevent public liability for the maintenance of private streets.

Road maintenance is an expensive commitment as it includes snow removal, landscape care, trash cleaning, and other activities, as well as the repair of road surfaces, curbing and drainage facilities. Generally, the maintenance responsibility falls to the homeowners association (HOA) or similar organization.

For successful HOA maintenance, it is important that its road maintenance program be adequately funded for current operations and a sinking fund established for reconstruction and emergency repairs. The maintenance program must assure an adequate service level and be capable of providing access as soon as possible after snows or other emergency situations.

Transportation planning in Loudoun County has supported the concept of providing interparcel connections between adjacent development projects to create a network for use by local traffic. This practice keeps local trips off the major collector roads, freeing up capacity for through-trips and more regionally oriented traffic.

Private Street Policies

1. The County should continue to allow private streets in limited circumstances provided for in the Zoning Ordinance, *Land Subdivision and Development Ordinance*, and *Facilities Standards Manual* (FSM).
2. An entity other than the County or Virginia Department of Transportation will maintain all private roads. The maintenance responsibility will be ensured by bonding/trust, etc. before approval of the private road. In each case where County ordinances allow private streets, there will be language specifying what entity will provide the maintenance of the road and what public disclosures are necessary to expressly state that the County or VDOT have no, and will have no, responsibility for the maintenance, repair or replacement of private streets.
3. The designation of a design sensitive street as private may be appropriate where alternative solutions do not address the policies of this Plan. The private street designation will be made by the Board of Supervisors through the rezoning process or County ordinances.

4. The County will use the mechanisms provided by the County Zoning Ordinance to ensure long term maintenance of private streets.
5. When homeowners buy on a private street, they will be notified in all sales material the street is private and there will be maintenance costs incurred by them and other residents for the upkeep of the street. It will be made clear this is not a County or state responsibility.
6. The estimated annual cost for maintaining private streets will be provided by landowners to all potential purchasers of houses on private streets as part of sales documents.